IN THE SPECIFICATION

Please amend the Brief Description of the Drawings beginning at page 5 as follows:

BRIEF DESCRIPTION OF THE DRAWINGS

For a more complete understanding of the present invention and the advantages thereof, reference is now made to the following description taken in conjunction with the accompanying drawings, wherein like reference numerals represent like parts, in which:

FIGURE 1 illustrates a planning continuum showing the intermediate steps from a business strategy to deliver information technology;

FIGURE 2 illustrates the planning continuum in more detail showing inputs, outputs and relationships;

FIGURE 3 illustrates a simplified block diagram of an enterprise architecture for a business, and how business and IT interrelate;

FIGURE 4 illustrates fundamental strategic information technology planning framework components;

FIGURE 5 illustrates an enterprise strategic information technology planning framework tower model;

FIGURE 6 illustrates an operating environment model for the enterprise business;

FIGURE 7 illustrates support and line functions for the enterprise business;

FIGURE 8 illustrates a logical business location map;

FIGURE 9 illustrates a geo-structural view of the logical business location map;

FIGURE 10 illustrates an information technology investment and expenditure profile;

FIGURE 11 illustrates a client information technology and industry expenditure benchmark;

~~FIGUREs 12A-C~~ FIGUREs 12A-12C illustrate the enterprise business frame with the external inputs and outputs and associated entities;

~~FIGUREs 13A-d~~ FIGUREs 13A-13D illustrate value stream aggregates of the business' enterprise;

~~FIGUREs 14A-B~~ FIGUREs 14A-14B illustrate a value stream event model and corresponding metrics;

FIGURE 15 illustrates a process architecture for a value stream of the business enterprise;

FIGURE 16 illustrates a value stream environment model;

FIGURE 17 illustrates a process workflow scenario model for a value stream;

FIGURE 18 illustrates enterprise information and data management framework and precepts;

FIGURE 19 illustrates business intelligence scenarios;

FIGURE 20 illustrates a geo-structural component view for information architecture;

FIGURE 21 illustrates an information and data architecture data warehouse framework;

FIGURE 22 illustrates an information application portfolio and system integration matrix;

FIGURE 23 illustrates an example of an integrated application architecture for value stream enablement;

~~FIGUREs 24A-C~~ FIGUREs 24A-24B illustrate a geo-structural component view for an application architecture;

FIGURE 25 illustrates an enterprise application software portfolio and system integration matrix;

FIGURE 26 illustrates an example of application portfolio best practices recommendations;

FIGURE 27 illustrates a technical reference model, associated platform, and governance structure of policies and standards;

FIGURE 28 illustrates a logical location connectivity model;

FIGURE 29 illustrates a logical location and logical software component matrix;

FIGURE 30 illustrates a logical location software deployment scheme;

~~FIGUREs 31 and 31A-D~~ FIGUREs 31 and 31A-31D illustrate a geo-structural component view for a technology infrastructure architecture;

FIGURE 32 illustrates an example of technology infrastructure architecture best practices recommendations;

FIGURE 33 illustrates a system management business model;

FIGURE 34 illustrates enterprise systems management process models;

~~FIGUREs 35 and 35A-C~~ FIGUREs 35 and 35A-35C illustrate a geo-structural component view for an information technology systems management architecture;

FIGURE 36 illustrates an integration matrix for a systems management software portfolio;

FIGURE 37 illustrates a geo-structural component view for an enterprise information technology management organizational framework;

~~FIGUREs 38A-B~~ FIGUREs 38A-38B illustrate the enterprise information technology management organizational model;

FIGURE 39 illustrates a framework blueprint;

FIGURE 40 illustrates a strategic information technology plan blueprint;

FIGURE 41 illustrates how a blueprint guides formation of target models;

~~FIGUREs 42A-B~~ FIGUREs 42A-42B illustrate an approach to strategic information technology planning;

FIGURE 43 illustrates the construction and implementation of a strategic information technology plan;

~~FIGUREs 44A-B~~ FIGUREs 44A-44B illustrate a strategic information technology framework workflow delivery scenario; and

FIGURE 45 illustrates the components of a strategic information technology plan;

FIGUREs 46A-46K illustrate the symbols used for noun and noun-like notations used in VDL modeling diagrams;

FIGUREs 47A-47J illustrate the symbols used for verb notations used in VDL modeling diagrams;

FIGUREs 48A-48G illustrate the symbols used for modifier notations used in VDL modeling diagrams;

FIGUREs 49A-49H illustrate the symbols used for preposition notations used in VDL modeling diagrams;

FIGUREs 50A-50F illustrate the symbols used for conjunction notations used in VDL modeling diagrams.

Please amend the paragraph beginning at page 36, line 15, as follows:

The enterprise business architecture is key to the business success of a corporation as well as the development of effective strategic IT plans. From the strategic business models articulating the business process architectures (value streams) the requisite enabling technology and information requirements can be derived. The level of detail and accuracy applied to these models will directly impact the robustness of the IT plans that can be developed for an enterprise as well as the success of their subsequent implementation. At the highest level, the business architecture is represented by an enterprise model 1200 that shows the essential elements of primary external business processes 1295 and the respective inputs 1230 from and outputs 1208 to external sources 1204. As shown in ~~FIGUREs 12A-C~~ FIGUREs 12A-12C, the frame 1202 in the middle of the model represents the client enterprise. This model is an example of a manufacturing industry enterprise and the specific content in the individual figures are only representative in nature and will vary for each enterprise.

Please amend the paragraph beginning at page 39, line 3, as follows:

The value streams can ~~be grouped~~ into four categories: Customer Facing, People Caring, Business Enabling, and Future Building. FIGUREs 13A-13D ~~FIGUREs 13A-D~~ represent a model 1300 of the aggregation of the processes within a particular category (e.g. Customer Facing) and the external inputs and outputs to support the value streams. This view shows not only the integration within a category but depicts the required inputs and outputs from the other categories within the enterprise as well as sources outside the enterprise such as enable customer process 1204 of ~~FIGUREs 12A-C~~ FIGUREs 12A-12C. The elliptical elements such as fulfilled order 1220 represent tangible objects. The hard cornered or rectangular objects such as customer invoice 1218 represent IT objects exchanged with other value streams or external entities. The specific content in the individual figures are only representative in nature and will vary for each enterprise.

Please amend the paragraph beginning at page 39, line 20, as follows:

In ~~FIGUREs 13A-D~~ FIGUREs 13A-13D, enable customer process 1204 of ~~FIGUREs 12A-C~~ FIGUREs 12A-12C is shown with its inputs and outputs interacting with both internal and external processes, such as order to cash process 1302 and credit analysis process 1295. An order to cash process 1302 generates customer invoices 1218 and quotes 1214 for enable customer process 1204 and generates credit check requests 1293 for authorize credit process 1292. Order to cash process 1302 also generates receivable debit entries 1304 and receivable credit entries 1306 as well as work orders 1308 for input to a manufacturing to distribution process 1310. Order to cash process 1302 handles credit check responses 1294 from authorize credit process 1292 along with orders 1216 and customer payments 1234 from customer process 1204. Order to cash process 1302 also handles Availability to Promise ATP data 1312, scheduled ship date 1314, advanced ship notice 1316, advice of receipt 1318, and proof of delivery 1320 inputs generated by manufacturing to distribution process 1310. Manufacturing to distribution process 1310 generates engineering change reports 1322, manufacturing material demands 1324, and receipt acknowledgments 1326 along with handling manufacturing material 1328 and technical manual 1330 inputs.

C4

Please amend the paragraph beginning at page 42, line 1, as follows:

~~FIGUREs 14A-B~~ FIGUREs 14A-14B represent an example of a generic event model 1400 for a value stream such as "Order to Cash". This concept requires that for each value stream identified in the enterprise business architecture there will be a corresponding event model. The event model articulates each event that triggers a workflow scenario within the value stream. The value stream event metrics matrices capture the number of events that occur over some specified time periods. These events could be either external or internal to the enterprise. For each event identified in the model a logical location software deployment schema will be derived.

Please amend the paragraph beginning at page 42, line 13, as follows:

In ~~FIGUREs 14A-B~~ FIGUREs 14A-14B, the fulfill order scenario 1401 is initiated by various events including customer cruising the web site 1402, customer placing order 1404, and credit authority responds to credit check request 1406, all of which are external events. Time to invoice the customer 1408, is an example of an internal event. Other internal events include time to invoice customer 1408, and customer makes payment 1410, order entry sends order to manufacturing 1412. Subsequently, field service repair orders replacement parts 1414, submits billing inputs 1415, shipping provides proof of delivery 1416, advice of receipt 1418, and Advance Ship Notice (ASN) 1420 as well as operations updates to ship date 1422 and ATP 1424 to assist in keeping track of the order. The maintain/change order scenario 1550 is driven by the customer changing an order 1426 or canceling an order 1428. Authorization to refund an order for fulfill refund scenario 1514 is given by customer service 1430. A review order scenario 1432 processes a customer's review request 1434. The specific content in the individual figures are only representative in nature and will vary for each enterprise.

Please amend the paragraph beginning at page 54, line 31, as follows:

The enterprise application portfolio is then summarized into a geo-structural view. ~~FIGUREs 24A-B~~ FIGUREs 24A-24B provide an example of geo-structural view 2400 for a generic manufacturing company. This geo-structural view shows the logical location of the logical application portfolio components that must be integrated through a technical infrastructure in order to form the required, integrated, corporate enterprise business system.

Please amend the paragraph beginning at page 55, line 7, as follows:

~~In FIGUREs 24A-B~~ FIGUREs 24A-24B, applications for an enterprise are supervised by an enterprise server farm 2402. Enterprise server farm 2402 includes servers for service management 2404, sales and marketing 2406, financial accounting 2408, product planning 2410, material management 2412, asset management 2414, logistics and distribution management 2416, QA/QC/QM management 2418, human resources 2420, complaint management 2422, legal and safety 2424, corporate management 2426, office automation 2428, web 2430 and others 2432. An external request processor 2434 handles server access to internal corporate data stores through enterprise data warehouse 2002, regional data mart 2036, and internal databases 2022. External request processor 2434 may also provide server access to external databases 2024 and external client workstations 2436. An internal request processor 2438 provides server access to client work stations at large regional/sales offices 2034, mobile/small users and offices 2032, and corporate headquarters 2030 either directly or through an office application server 2440. Office application server 2440 may include print 2442, file 2444, post office 2446, and office automation 2448 functions. Client workstations may include workflow/collaboration replication 2450, application presentation 2452, and web applications 2454 capabilities.

Please amend the paragraph beginning at page 63, line 5, as follows:

~~FIGUREs 31 and 31A-D~~ FIGUREs 31 and 31A-31D provide an example of a technical infrastructure logical/physical view 3100. This view correlates the required system components and infrastructure requirements of the enterprise for enabling the value streams and workflow scenarios to the logical location maps and templates from the business architecture plane. From the logical infrastructure depictions in ~~FIGUREs 31 and 31A-D~~ FIGUREs 31 and 31A-31D coupled with the logical location deployment schemas, the lower level technology component architectures (e.g. internet) can be identified and consequently engineered. The logical location software models and the consolidated technology infrastructure architectures identify the logical applications that need to integrate and operate together, portray the enabling operational elements, processes and technology components for achieving the desired operating results based on the organization's business goals, objectives, critical success factors, and performance metrics, and highlight the system integration requirements in support of the information, application, systems management, and infrastructure architectures.

Please amend the paragraph beginning at page 68, line 21, as follows:

An enterprise systems management technology architecture 3500 shown in ~~FIGUREs 35 and 35A-C~~ FIGUREs 35 and 35A-35C can be constructed to depict the technology layout based on the ITU-T Systems Management Business model 3300 and mapped to the logical location maps of the enterprise. The geo-structural view highlights where the enabling application architectural components of the Enterprise Systems Management Software Portfolio are logically located within the enterprise. The geo-structural view shows the logical location of all the logical systems management application components that must be integrated together through a technical infrastructure to create the required, integrated, corporate enterprise systems management environment.

Please amend the paragraph beginning at page 69, line 3, as follows:

In ~~FIGUREs 35 and 35A-C~~ FIGUREs 35 and 35A-35C, element management 3308 of business model 3300 includes sales/manufacturing locations 3502, customer service centers 3504, corporate/regional headquarters 3506, and operations centers 3508. Each location of element management 3308 may include management information base agents 3510, enterprise servers 3512, database servers 3514, hubs 3516, ATM switches 3518, routers 3520, office servers 3522, gateways 3524, mainframe 3526, and desktop computers 3528. Element management 3308 communicates with systems/network management 3306 over a network 3530. Systems/network management 3306 may include at an operations center 3532 having performance management 3534, event management 3536, configuration management 3538, and systems support 3540 functions. Event management may further include systems monitoring 3542, network monitoring 3544, and fault management 3546. Systems support 3540 may have object management 3548, print management 3550 directory services management 3552, time management 3554 software/media management 3556, security services 3558 and web server management 3560.

Please amend the paragraph beginning at page 71, line 3, as follows:

~~FIGURES 38A-B~~ FIGURES 38A-38B depict the IT organizational model 3800 from which the IT organization areas can be identified and modeled. An executive board 3802 includes business unit partners 3804 and IT governance 3806. Executive board 3802 provides strategic business direction and value needs and IT governance, policy, and approvals in response to IT leadership and innovation, strategic direction, solutions plan, investment and opportunities and business value results inputs from the enterprise. The enterprise performs a manage/deliver IT value function 3808 that uses an IT supply chain model 3810 with plan/manage information technology 3812, assess demand 3814, develop products, services, and processes 3816, and fulfill demand 3818 links. Manage/deliver IT value function 3808 generates IT products and IS services for stakeholders and business clients 3820 in response to collaboration, service needs and metrics, and business process innovations developed with them. Manage/deliver IT value function is driven by Tower model 500 in conjunction with the people and culture 3822 of the enterprise and its IT partners 3824. IT partners 3824 provide products, experience, trends, services, staff, innovation, and expertise to assist the people and culture 3822 of the enterprise to implement IT development and delivery. Aspects of the people and culture 3822 of the enterprise that are important both individually and to the enterprise include identification of core competencies 3826, roles and responsibilities 3828, traits and behaviors 3830 skills and knowledge 3832, learning reflex 3834, incentives 3836, and performance practices 3838. Tower model 500 provides a business context 3840, IT change initiatives 3842, IT strategic direction 3844, IT innovation solution sets 3846, and IT industry knowledge 3848 in order to deliver the enterprise's IT value.

Please amend the paragraph beginning at page 76, line 21, as follows:

C13

The blueprint components selected from the Tower must then be evaluated depending on customer needs, pre-existing conditions, IT and business environments, and maturity of existing client architectures and frameworks. Upon that evaluation an approach and work pattern can be developed to correlate components into a unified whole for a specific purpose and result. In the case of a strategic IT planning work pattern, the result will be a strategic IT plan that includes the appropriate business and technology architectures and frameworks and a roadmap on how to get from the current environment to the target environment. ~~FIGURES 42A-B~~ FIGURES 42A-42B graphically depict how a strategic IT planning approach is constructed from the strategic IT plan blueprint in conjunction with the previous description of the intent behind the IT planning strategy.

Please amend the paragraph beginning at page 81, line 9, as follows:

~~FIGUREs 44A-B~~ FIGUREs 44A-44B depict the workflow scenario for delivering a strategic IT framework. The following is a brief description of the model. The first critical step defined in the workflow is to initiate the engagement or project by defining the approach, identifying participants including project team members, decision makers, and information sources, establishing the duration and key milestones, and establishing the scope and objectives. Interviews with key participants are then conducted with typically parallel efforts to gather existing documentation. This set of work or activities will lead to the next major steps, which are the development of the requisite business and technology models inclusive of current situation analysis and future direction understanding. The Tower reference models are fully documented and in this case are considered to be major deliverables with appropriate client participation and approvals for content. Key inputs to the development of the models are knowledge of emerging technologies, industry best practices, technology policy, and business trends. The project management process requires that project workbooks are created and interim milestones are met for periodic reviews and continuous feedback. Based on the drivers, gaps, and transition needs, a strategy to change the IT environment is defined. The participants assess this initial view of the Strategic IT Framework to assure business/IT alignment, estimate resources and feasibility, and determine staging and priorities of change initiatives. The result of this assessment is then presented to key decision makers which are typically IT Steering committees. The projects is then considered closed and should be viewed objectively to assess where it was successful and determine a process to maintain the plan and ensure its implementation.

Please amend the paragraph and tables beginning at page 90, line 1, as follows:

Appendix 2: Visual Design Language Summary

C15 The following section identifies the notations that are used in VDL modeling diagrams. VDL was authored by Neal Goldstein, who is a consultant on business process design, software development methodologies, and object technology. His emphasis is on innovating business processes, and the appropriate use of technology in implementing the processes. He has been Director of Management Information Systems for a Fortune 500 corporation and the primary architect of a number of systems that have implemented redesigned business processes. He can be reached at

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FIGUREs 46A-46K show the symbols used for noun and noun-like notations used in VDL modeling diagrams. FIGUREs 47A-47J show the symbols used for verb notations used in VDL modeling diagrams. FIGUREs 48A-48G show the symbols used for modifier notations used in VDL modeling diagrams. FIGUREs 49A-49H show the symbols used for preposition notations used in VDL modeling diagrams. FIGUREs 50A-50F show the symbols used for conjunction notations used in VDL modeling diagrams.

Nouns

A noun corresponds to the noun in English. Nouns may act (be a subject) or be acted upon (object). And just as in English, a noun is more than just a person, place, or thing. It may also be a concept, class, or category. What makes an element a noun is what makes a word a noun in English, how it is used. In our case, a noun is something that can appear on one or the other side of a noun verb noun phrase.

Noun or Object

(FIG. 46A)

Nouns are also referred to as objects. A solid disk represents a noun.

Noun-likes

Noun-like elements are not strictly nouns, but can act like them, i.e. they can act as a subject or object.

Frame

(FIG. 46B)

The Frame is the scope of the explanation. It can be an extended enterprise, enterprise department, system, etc. A Frame is represented by a rectangle with two right angle lines in the top left corner.

Pattern

(FIG. 46C)

A pattern is a shared set of relationships between an aggregation of elements. Elements can be anything in any combination – people, pieces of paper, food, character traits, behaviors, other patterns, relationships, or anything else we can identify. Patterns can be used to represent an abstraction, class, category, or any cognitive set of properties such as a "vehicle" or the similarities between version of a process. A pattern is a shortcut that avoids the need to separately describe each element. A "bowl" shape represents a pattern.

Process

(FIG. 46D)

A process is set of activities that use clearly identified input(s) to produce clearly identified output(s). A process takes time and almost always crosses functional boundaries in most (functional) organizations. A process may be value added, support, or non-value added. An hourglass represents a process.

Sub process

(FIG. 46E)

A Sub process summarizes all activities in a functional area, such as accounting or operations. Placing an "S" in the process symbol identifies a sub process.

Operation (Execution scenario)

(FIG. 46F)

An operation or execution scenario is a logically related set of a process's activities that uses clearly identified input(s) to produce clearly identified output(s). It can be decomposed to describe the components, behaviors, and their first order relationships that result in an operation's output. An operation should be a gestalt, a whole that is taken by the viewer as being more than just the sum of its parts. A file folder represents an operation. At times it is useful to organize activities hierarchically so that a single operation as a whole is represented as a single element in a larger operation. In this case the operation element can represent a sub operation.

Procedure

(FIG. 46G)

A procedure scenario is an activity that is measured by result and behavior. Associated with a procedure scenario is a high level set of instructions to perform the activity.

Content Rule

(FIG. 46H)

A scenario performed by a computer may have several content rules for performing computer operations associated with it.

Interface Rule

(FIG. 46I)

A scenario performed by a person using a computer may have several specifications for the interface or several interface rules associated with it.

Content Elements

The content rules contain additional elements. These include content objects and abstractions. These are directly analogous to, respectively, nouns and patterns. We use hard angles with content elements to identify them as technological creations used by a computer rather than the real world or concepts.

Content Object

(FIG. 46J)

A content object is a technological creation, usually inside of a computer. A parallelogram-type solid represents a content object.

Content Abstraction

(FIG. 46K)

A content abstraction is an assertion that certain content objects share the attributes and responsibilities listed for the abstraction. A content abstraction is a shortcut that avoids the need to separately describe each content object. A shallow box represents a content abstraction.

C15

Verbs

A verb is a kind of relationship between nouns or noun-like elements that involves action. Some verbs require that the noun on one or both ends of the relationship be active, i.e. able to behave. The requirement for a active noun, or one that is capable of behaving is represented in the Language Reference by an "A" inside of a circle. Things like people, computers, and machines are active, while things like information, rocks, and business reports are not. A noun-like element that is an abstraction of an active noun, or whose decomposition contains an active noun, also meets this requirement. Depending on the level of detail desired, verb symbols can either be drawn from a noun or from a specific activity.

Create

(FIG. 47A)

An active noun can create nouns and other elements. Create is represented by a line with a plus sign (+) on the end toward the element being create.

Create

(FIG. 47B)

An active noun can destroy nouns and other elements. Destroy is represented by a line with a minus sign () on the end toward the element being destroyed.

Manipulate

(FIG. 47C)

An active noun can manipulate nouns and other elements. Manipulation encompasses change, modification and physical movement. Manipulate is represented by a line with an arc on the end toward the element being manipulated noun.

Use as information

(FIG. 47D)

An active noun can use (usually non-active) nouns as information. As we said, what makes something information is that it answers a question. Use as information is represented by a line with a reverse arrow on the end toward the object that contains the information.

Use as input

(FIG. 47E)

Active nouns can use (usually non-active) nouns as input. This is most commonly used to represent things like raw materials used in an activity or process. Use as input is represented by an arrow with the arrow head on the end toward the object that uses the input. You may also distinguish between information, which answers questions, and data, which serves as input, by treating data as input.

Use as a rule

(FIG. 47F)

An active noun can use (usually non-active) nouns as a rule or constraints placed upon a process or action. Use as a rule is represented by a line with a double reverse arrow on the end toward the object that contains the rule.

Collaborating

(FIG. 47G)

Two active nouns can be collaborating. Collaborating is a two-way interaction. A double-headed arrow passing through a conduit represents collaborating. Since to be able to send information (or commands) from one noun another, there must be an activity for the sender that sends the message and one for the receiver that receives and acts on the message, collaboration is more commonly shown between activities.

Command

(FIG. 47H)

An active noun can command active nouns. Command is a one way interaction. Command is represented by an arrow passing through a conduit, with the arrowhead on the end toward the object that receives (and performs) the command.

Cause

(FIG. 47I)

An element can cause something to happen. Cause is different from create in that it is indirect. I don't make a customer unhappy – an action on my part causes a customer to become unhappy. This relationship can exist between any two elements. A dashed line going through a conduit with an arrow on the end toward the element being caused represents cause.

Cause to change, Affect

(FIG. 47J)

An element can cause something to change. Cause to change is different from manipulate in that it is indirect. Cause to change is represented by a dashed line with an arc on the end toward the changed element.

Modifiers

Attribute

(FIG. 48A)

An attribute describes some feature or quality about an element. An attribute is represented by a flat oblong disk, slightly above the plane and connected to the element. Attributes can be concrete or induced. Concrete attributes are things like color, size, state, status and other "objective" statements. Induced attributes are in the eye of the beholder. Things like quality and a good place to work fall into that category. Induced attributes are based upon some mental model of what that attribute means. A dash of quality cannot be added to a product during quality assurance, it becomes an attribute when a certain set of conditions are true.

Absence of

(FIG. 48B)

The absence of an element may cause a problem and we may want to indicate that something is not there. Absence of is represented by a slash through the missing element. Absence of is used extensively in Contexts to illustrate casualty and especially useful to call attention to missing relationships.

Activities

Active nouns may have explicit activities specified. An activity is a specific action, with a result that can be measured and/or evaluated. Activities can be either responsibilities or procedures.

C15

Responsibility

(FIG. 48C)

A responsibility is an activity that is measured by results rather than behavior. A responsibility is represented by text over a line, slightly above the plane and connected to the element.

Procedure

(FIG. 48D)

A procedure is an activity that is measured by result and behavior. Associated with a procedure is a step-by-step set of instructions to perform the activity. A procedure is represented by text over a line, over a document icon, slightly above the plane and connected to the element.

Sub operation

(FIG. 48E)

At times it is useful to organize activities hierarchically so that a single operation as a whole is represented as a single element in a larger operation. As was shown previously, a sub operation can be represented by an operation within an operation. Alternatively, a sub operation is represented by text over a line, over an operation icon, slightly above the plane and connected to the element.

Activity with content rule

(FIG. 48F)

An activity performed by a computer may have a business or content rule for performing a computer operation associated with it. A content rule is represented by text over a line, over a computer icon, slightly above the plane and connected to the element.

Activity with interface rule

(FIG. 48G)

An activity performed by a person using a computer may have specifications for the interface or an interface rule associated with it. To indicate this, a monitor icon is placed under the activity's text line.

Prepositions

Propositions show the relationship between elements.

Aligned

(FIG. 49A)

Two elements can be aligned. Elements are aligned when both have the same goals. Aligned is represented by a dashed line passing through a conduit.

Consistent

(FIG. 49B)

Two elements can be consistent. Elements are consistent when they are compatible or synchronized at the operation level. A line passing through a conduit represents Consistent.

Same

(FIG. 49C)

Two elements can be the same. The same element may have different names, for clarity or by necessity.

C15

Implemented by, Partially implemented by

(FIG. 49D)

An element may be implement by, or partially implemented by another element. Implemented by is used to indicate satisfaction of some requirement and is usually a relationship between things of different types. Implemented by is represented by a line with a double headed arrow from the element being implemented to its implementation, with the arrow heads on the end towards the element that is the implementation. Partially implemented by is represented by a dotted line with a double headed dotted arrow from the element being implemented to its partial implementation, with the arrow heads on the end towards the element that is the partial implementation.

Replaced by, Partially replaced by

(FIG. 49E)

One element may be replaced by or partially replaced by another. This may occur when something becomes obsolete. Replaced by is represented by a line with an "x" on the end toward the element being replaced. Partially replaced by is represented by a dotted line with an "x" on the end toward the element being replaced.

Part of

(FIG. 49F)

A noun can be part of another noun that is a grouping of objects that combine to make up a whole. Part of is represented by an arrow with right-angle lines coming from the top of the part into the bottom of the whole, with the arrow-head on the end toward the whole.

Contained in

(FIG. 49G)

A noun can be contained in another noun. Contained in is represented by a curved arrow from the element contained, into the top of the element containing it, with the arrowhead on the end toward the container.

Kind of, Type of

(FIG. 49H)

An element can be a kind of or type of another element. This is the case when they share properties. This relationship can exist between any two elements, and not just an element and a pattern, which we indicated can be used to define what the shared properties are. In the former case, all you may want to show is that one element is a type of another element, without describing their shared properties. A curved arrow with right-angle lines represents type of, coming from the element that is the type of, with the arrow head on the end toward the element that is that type.

Conjunctions

A conjunction is used to join elements.

Time

Depending on the context, Western culture interprets left to right and top to bottom as a time sequence. We use that automatic interpretation to describe the time sequence of activities in Execution Scenarios.

C15

Time line

(FIG. 50A)

It may be useful to explicitly represent a time line. A time line can show that time has passed. An object's activities can also be placed along a time line at the point in time at which they execute. A time line is represented by a alternating short and long dashes. A time line is necessary to show time in a Context.

Delay

(FIG. 50B)

There may be a delay in a time line. A delay is represented by two 45 degree lines indicating the start and end of the delay. An attribute may be used to explain the delay or conditions for restart.

Repeat

(FIG. 50C)

A set of activities may repeat. Two vertical lines indicating the start and end of the segment that repeats represent Repeat. An attribute may be attached to the right vertical line to indicate the conditions that causes the repetition to stop. Repeats may be nested.

Selection from alternatives

Often things are not fixed. There may be the possibility of alternatives – paths in a time sequence or element relationships, attributes, parts, and the like.

One or more

(FIG. 50D)

One or more of the elements may exist. One or more is represented by a line with a number of branches corresponding to the number of alternatives. None may be a choice and must be explicitly indicated. This can be used to indicate such things as the possibility of one or more paths in a time sequence or one or more relationships, one or more attributes, one or more things contained, one or more parts, and the like.

Only one

(FIG. 50E)

Only one of the alternatives may exist. Only one is represented by a line with a vertical line through number of branches corresponding to the number of alternatives.

C15

Any order

(FIG. 50F)

Sometimes activities may be performed in any order. Braces represent any order.